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Santos, Simone Vidal; Costa, Roberta

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RESEARCH

Cuidados com a pele do recém-nascido: o estado da arte

Skin care of the newborn: the state of art

Cuidado de la piel del recién nacido: el estado del arte

Simone Vidal Santos [1] , Roberta Costa [2]

ABSTRACT

Objective: Recognizing the state of art regarding care for the skin of newborns. **Method:** It is an integrative literature review. The search for studies was performed in the Medline, Lilacs and BDENF databases, and 18 studies published between 2009 and 2013 were selected. **Results:** It indicated a variety of orientations, which may be used by health professionals in the care for the skin of newborns. The most frequently addressed topics were: causes for lesions, nursing care in the prevention of lesions, appropriate handling of the newborn infant, assessment of the skin, prevention of transepidermal water loss, body temperature regulation, use of emollients and antiseptics, bath, dressings, fixation of devices, prevention of pressure ulcers, care measures toward punctures and treatment of lesions. **Conclusion:** The study allowed updating the subject, enabling a humanized, individualized and qualified care that ensures the safety of the neonatal patient. **Descriptors:** Skin, Newborn, Nursing care.

RESUMO

Objetivo: Conhecer o estado da arte sobre os cuidados com a pele do recém-nascido. **Método:** Revisão integrativa de literatura. A busca dos artigos foi realizada nas bases de dados Medline, Lilacs e BDENF, sendo selecionados para análise dezoito artigos publicados entre os anos de 2009 e 2013. **Resultados:** Existe uma variedade de orientações que podem ser utilizadas pelos profissionais de saúde no cuidado com a pele do recém-nascido. Ressalta-se que os tópicos mais abordados foram: causas de lesões, cuidado de enfermagem na prevenção de lesões, manuseio adequado do recém-nascido, avaliação da pele, prevenção de perda de água transepidérmica, termorregulação, uso de emolientes e antissépticos, banho, adesivos, fixação de dispositivos, prevenção de úlceras por pressão, cuidados com punções e tratamento de lesões. **Conclusão:** Os resultados desta pesquisa possibilitam a atualização do tema, propiciando uma assistência humanizada, individualizada, qualificada, que garanta a segurança do paciente neonatal. **Descritores:** Pele, Recém-nascido, Cuidados de enfermagem.

RESUMEN

Objetivo: Conocer el estado del arte en el cuidado de la piel del recién nacido. **Método:** Una revisión integradora de la literatura, com búsqueda de artículos en Medline, Lilacs y BDENF, fueron seleccionados dieciocho artículos publicados entre los años 2009 y 2013. **Resultados:** Hay una variedad de orientaciones, que pueden ser utilizadas por profesionales de la salud en el cuidado de la piel del recién nacido. Es de destacar que los temas más discutidos fueron: causas de lesiones, la atención de enfermería en la prevención de lesiones, el manejo adecuado del recién nacido, la evaluación de la piel, prevención la pérdida de agua transepidérmica, termorregulación, el uso de emolientes y antisépticos, baño, adhesivos, fijación de dispositivos, la prevención de úlceras por presión, la atención de pulmones y el tratamiento de lesiones. **Conclusión:** Es posible actualizar el tema, ofreciendo una asistencia humanizada, individualizada y calificada, lo que garantiza la seguridad del paciente neonatal. **Descriptores:** Piel, Recién nacido, Cuidados de enfermería.

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[1]Nurse Stomatherapist, Professional master in nursing care Management/UFSC, The Ministry of Health's consultant for the Kangaroo Method, Nurse at the Neonatal Intensive Care Unit-HU/UFSC, member of the interdisciplinary group of care for persons with wounds of HU/UFSC, Member of the research group on nursing of women's and newborn health- GRUPESMUR. Florianópolis, SC, Brazil. Email: simonevidal75@gmail.com; [2]Doctorate in Nursing at the post-graduation program in nursing (PEN) at UFSC (2009), master's degree by the PEN/UFSC (2005), specialization in obstetric nursing UFSC (2001), specialization in methodology of Professional Education in nursing from the University of southern Santa Catarina (UNISUL) (2003), Assistant Professor I of the Department of nursing and professional master's program in nursing care Management of UFSC. Florianópolis, SC, Brazil. Email: robertanfr@hotmail.com

INTRODUCTION

Advances in neonatal care evolve since the 1960s, introducing new techniques, treatments, equipment and expertise in this area, reducing mortality and increasing survival of the newborn (NB). This evolution of neonatal care requires health professionals, training and continuous improvement, to rational and responsible application of knowledge.[1]

Every day, as members of a nursing team who care for newborns admitted to the Neonatal Intensive Care Unit (NICU), guided by the fragility of this population and the risks to which they are exposed, we reflect on possibilities for new forms of care.

New forms of care can be developed and supported by nursing research, as this approach theory and practice, the profession supports and collaborates with the production of knowledge.[2] However, despite the recognition for its quality and relevance, there is mismatch between investigative findings in nursing research and its use in professional practice.[3]

Therefore, we emphasize the importance of having closer ties between research and care. The knowledge built up in the polls, by professionals of both parties, should be used as the main ingredient of the practice of nursing care.[3]

Care practices with the skin of newborns, especially preterm newborns (PN), commence as soon after birth and raise ongoing concerns of professionals working in the NICU.[4] Thus, the team must seek grants for skilled attendance, risk-free and based on current studies on how best to care for the skin of the newborn.

Given this context, we chose to perform this integrative review, in order to know the state of the art in skin care RN.

The results may contribute to the instrumentalization of health professionals to care for the skin of newborns, converging certainly in improving the quality of care and greater security to the neonatal patient.

METHOD

This article presents the development of an integrative literature review. This preparation started from the identification of the subject and the guiding question, followed by the definition of inclusion and exclusion criteria of articles, identification and selection of studies, interpretation and synthesis of the results, ending up with the presentation of data.[5]

To guide this integrative review, there was elaborated the following question: *What are the publications about skin care in newborns, in scientific journals over the past five years?*

Data collection occurred during the months of October and November 2013, the MEDLINE database (Database of the International Medical and Biomedical Literature area), LILACS (Latin American and Caribbean Health Sciences) and BDENF (nursing database), and the descriptors were: skin, newborn, premature, nursing care, prevention, treatment, intensive care, neonatology.

As inclusion criteria for the sample selection of this integrative review there were used articles published between the years 2009 and 2013 in national and international journals, with texts written in Portuguese and English that addressed skin care in newborns. Exclusion criteria were: editorial, anal abstracts, theses, dissertations, books, articles that did not fit in the time frame or they did not meet the proposed objective. Items found on more than one database were considered once.

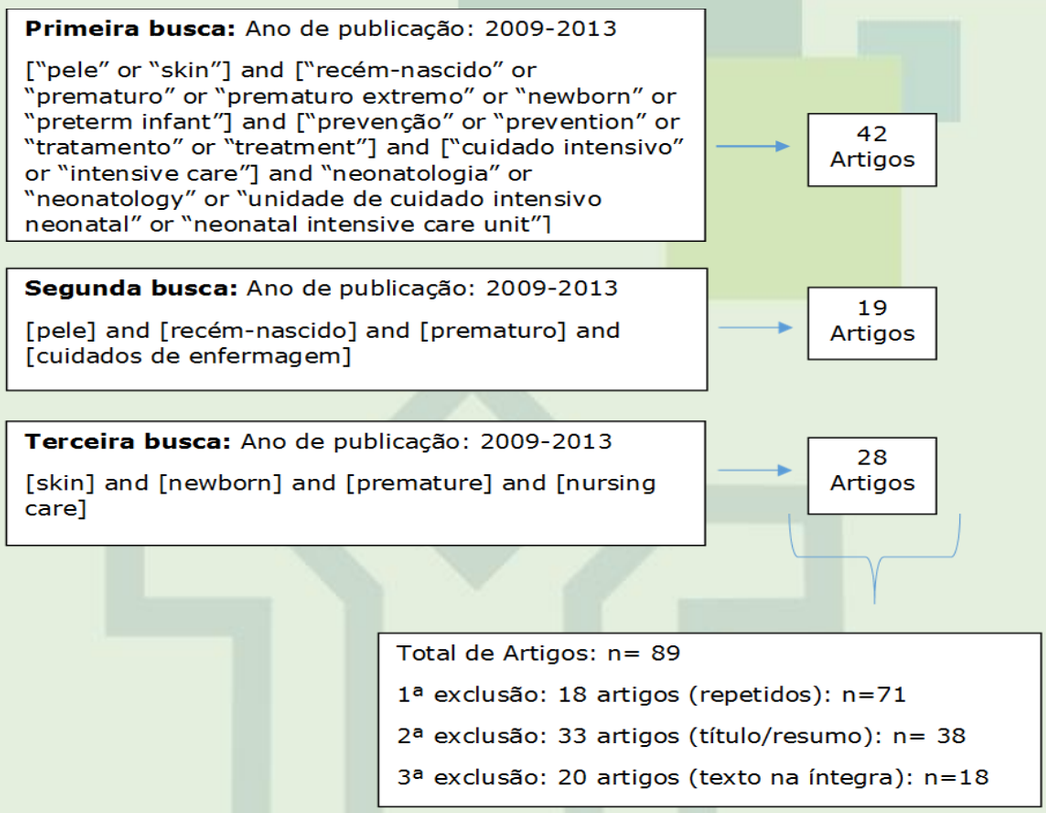
To survey the sample was held initially the search, using Boolean operators, the following descriptors: ["skin"] and ["baby" or "premature" or "extremely premature" or "newborn" or "preterm infant"] and ["prevention" or "prevention" or "treatment" or "treatment"] and ["intensive care" or "intensive care"] and "neonatal" or "neonatology" or "unit neonatal intensive care" or "neonatal intensive care unit"]. In this first time there were found 42 items.

In order to raising more subsidies for review, it was conducted a second search, using Boolean operators, with the descriptors: [skin] and [newborn] and [premature] and [nursing]. At this time found 19 articles. Finally, we used these descriptors in English: [skin] and [newborn] and [premature] and [nursing care], where we find 28 more articles, totaling 89 items.

To define the corpus analysis began with the exclusion of 18 studies were repeated. Soon we assessed the title and the summary in order to confirm that contemplated the research question and if they met the inclusion criteria, selecting, thus 38 items. After the pre-selection, there was the reading of the articles in full, in order to avoid selection bias. The selected texts that were not available in their entirety were requested from the Virtual Health Library through email. Therefore, the final sample included 18 articles, 11 in

MEDLINE, five in BDENF and two in LILACS. In Figure 1, it can be seen how the process of research and selection of items was.

Figure 1 - Research and selection of articles - MEDLINE, LILACS, BDENF - 2009-2013



Source: Literature review conducted by researchers, Florianopolis, SC, 2013.

For data analysis there was conducted a questionnaire covering information with the following information: item identification, authors, published periodical, objectives, methodology, results and conclusions found. The data analysis was performed descriptively, allowing identify subsidies for the improvement of care for prevention and treatment of skin lesions in newborns, and also highlights the knowledge gaps on the subject studied.

RESULTS AND DISCUSSION

In Tables 1, 2 and 3 are presented in brief the 18 articles included in this integrative review. They are separated by database searched.

Table 1 - Summary of articles on skin care of the newborn, 2009 - 2013.

Reference	Language/ Year	Method	Objective	Conclusions
6	Portuguese 2009	Literature review	Checking the interaction between the skin of the PTNB and the proper handling, guided by the nurse	You must drive carefully through a protocol of handling of the skin of the NB
7	English 2009	Descriptive study	Describing program where NBs eligible were dressed in incubators	Prevents heat loss and promotes environment neutral term
8	English 2010	Prospective randomized controlled study	Evaluating in PTNB if polyethylene cap prevents heat loss better than polyethylene wrap and conventional drying	Caps/polyethylene wrappers are comparable to avoiding heat loss postpartum. Both are more effective than the conventional method
9	English 2010	Retrospective cohort	Comparing response of NBs extreme low weight, placed in polyethylene bags X traditional measures of temperature control	NBs in polyethylene bags had higher skin temperature at the time of admission to the ICU and after 1:0 of life
10	English 2010	Comparative study	Evaluating two products on skin integrity of PTNB and transepidermal water loss	Both are effective to decrease transepidermal water loss and maintain integrity
11	English 2011	Review study	Describing iatrogenic skin lesions that can occur in the NB as a result of procedures	Iatrogenic injuries are preventable. Meet the complications can help avoid them and diagnose them early
12	English 2011	Descriptive study	Describing benefits of adhesive remover silicone base	Reduces pain in removing the tape, prevents infection and peeling
13	English 2011	Descriptive study	Describing peculiarities of the skin and skin care of PTNB	Healing of wounds requires holistic assessment and knowledge about dressings
14	English 2012	Descriptive study of statistical analysis	Describing and evaluating management of temperature and humidity of incubator	There was great variation in the temperature of the incubator and humidity of a NICU for another.
15	English 2012	Case report	Documenting successful treatment using products of regenerative medicine in patient with extravasation injury	The management NBs affected with extravasation injuries must involve a multidisciplinary team to avoid serious complications
16	English 2013	Retrospective study	Examining the effects of prematurity and time in the maturation of the stratum corneum and identify what causes impact on skin conditions	PTNB in early contact with feces and high exposure to these, and RNs the term are at high risk of suffering skin lesions

Source: research on data base MEDLINE, 2013.

Table 2 - Synthesis of articles on skin care of the newborn, 2009 - 2013.

Reference	Language/ Year	Method	Objective	Conclusions
17	Portuguese 2010	Review study	Identifying care to maintain skin integrity of PTNB and main causes of injury	Nursing care are essential to reduce injuries on the skin during hospitalization
18	Portuguese 2009	Exploratory-descriptive study	Meeting the care provided to the NB for prevention of skin lesion	Care contributes to minimizing harmful effects of hospitalization and for good quality of life
19	Portuguese 2010	Exploratory descriptive study, qualitative	Identifying adherence of the nurses in the use of semipermeable membrane in the skin of the NB as protection factor and observe the nursing care during handling	It was noted that there were nurses' accession as the use of semi-permeable membrane for skin protection of NB
20	Portuguese 2011	Qualitative descriptive study	Describing the care of nursing with the neonate's skin interned in NICU and identify, injuries that may arise on the skin of these	Lesion on the skin of newborns is a reality faced by the neonatal team, in this way, they should recognize them, warn them and treat them appropriately
21	Portuguese 2012	Literature Review	Reflecting about nursing care to skin care of RNPT and discussing the benefits and harms of this care	Recognizing the physiology and anatomy of the skin and identifying the risk factors for injury are important measures to direct nursing care

Source: search in database BDENF, 2013.

Table 3 - Synthesis of articles on skin care of the newborn, 2009 - 2013.

Reference	Language/ Year	Method	Objective	Conclusions
22	Portuguese 2011	Experimental study randomized type	Verifying the effectiveness of semipermeable membrane into the skin of NB about weight loss and blood sugar values, water quota, urinary sodium and density	The semi-permeable membrane a therapeutic resource effective to minimize the loss of transepidermal water
23	Portuguese 2012	Analysis model of concept of Rodgers	Analyze the concept of skin care of the NB	The concept showed association with prematurity and risk of infection, along with the characteristics over time

Source: search in database LILACS, 2013.

After data analysis showed that three articles were published[6-7,18] in 2009, five[8-10,17,19] in 2010, five[11-3,20,22] in 2011, four[14-5,21,23] in 2012 and one[16] in 2013, showing that it is relevant, and was being searched steadily by health professionals by the year 2012. However, in 2013 there is a decrease in the number of publications related to the theme.

As for the language of publication, ten articles[7-16] were available in English and eight[6,17-23] in Portuguese. This denotes the interest of Brazilian health professionals on the subject.

Regarding the type of study, we found seven descriptive studies,[7,12-4,18-20] four review articles,[6,11,17,21] one case report,[15] a prospective randomized controlled study,[8] a study of retrospective cohort,[9] a comparative study,[10] an experimental study type randomized clinical trial,[22] one retrospective[16] study and concept analysis study.[23]

There are twelve[6-8,12-3,17-23] studies were published in nursing journals six [9-11,14-6] in medical journals, and 13 articles[6-8,10,12-3,17-23] were written by professionals of the nursing team and five[9,11,14-16] by medical professionals. This demonstrates the interest of nursing professionals in research and the growing participation of these publications related to the theme.

Regarding the NB skin, all authors[6-23] highlight the fragility and immaturity of its layers, especially the epidermis and its outermost layer, the stratum corneum, with concordance between the studies on the importance of preserving the integrity of integument, in order to promote safe care to hospitalized newborns.

A study[16]examined the effects of prematurity and time from birth to maturation and integrity of the stratum corneum. In this study appeared three groups, with group a PN and children under 38 weeks corrected gestational age (IGC), the two group of preterm infants and older than 38 weeks and the IGC Group Three with full-term infants. Surprisingly, the preterm infants had lower perineal irritation and greater integrity of the stratum corneum than full-term infants. This demonstrates the fragility of the skin is not only related to the PN, but also the full-term newborns.

From the selected studies, four[6,18,20-1] reinforce the nursing team is responsible for gentle care, playing a fundamental role in this process and should be capable of protection measures and promotion of skin integrity. Professionals should share experiences and collectively seek solutions that translate into changes to improve care to hospitalized newborns.

According to one author,[13] injuries in neonatology can happen mechanically, chemical, thermal or infectious. It may also be related to congenital skin problems. Two studies[20-1] point dermatitis diaper or contact, traumatic injuries by removing attachments devices and complications by venipuncture as the most frequent lesions found in the skin of hospitalized infants.

About the main causes of skin injury in newborns, three studies[17,20-1] highlight the use and fixing devices, venous punctures, bathing, diapering, perineal hygiene, caregiver handling, use of sources heating and carelessness.

In an article[21]the authors report that the dermatitis is related to cleaning the perineum, type and brand of diaper, suggesting attention caregiver to evaluate the perineal area during diaper change. These authors also point out the risk of irritation on the skin caused by diapers and the use of antibiotic ointments, which can cause secondary infections by fungi.

A study describing the main iatrogenic injuries that can occur in infants as a result of perinatal medical procedures and postnatal, highlights the low birth weight, gestational

age, length of time, the use of venous catheters, mechanical ventilation and support with continuous positive airway pressure as major risk factors for iatrogenic.[11] In this study, iatrogenic rate is approximately 57% and the main causes of injuries are described lesions on the scalp, thermal burns, chemical burns, injuries adhesives, extravasation injuries, heel prick injuries, nasal lesions, lesions by chest tubes and related injuries to arterial catheters. There are perceived factors causing new injuries, while some of the corroborating factors mentioned in previous studies.

Regarding handling, three studies[6,17,21] guide minimal handling of the NB and suggest that decubitus change is performed every three to four hours. One of authors[6] further recommends that the NB, whenever possible, is nestled in bed in a fetal position, as this position, as well as providing safety and comfort to the newborn, contributes to the reduction of heat loss.

Related to skin assessment, two authors[17-8] suggest that this is done consistently, daily or at each change of duty. Attention should be paid to abnormal cutaneous findings, moisture, dryness, peeling, redness, edema, injury and infection. Nurses interviewed in two studies[18-9] indicated the importance of evaluating the NB also as gestational age, birth weight and skin texture.

Regarding the newborn, thermoregulation and preventing transepidermal water loss (PAT), two studies[6,17] suggest the use of double-walled incubator with humidification, maintaining a neutral thermal environment. The axillary temperature of the newborn should be regularly monitored and maintained between 36,5 to 37,5°C values. In addition, one should keep gas offered to the newborn in appropriate temperature and humidity.

As a strategy to prevent transepidermal water loss, Relative Humidity (RH) of the air in the incubator should be maintained at 85% during the first week of life, reaching 70% in the third week and gradually reducing to 60% after this period, this percentage maintaining the NB to achieve weight 1500 grams.[6]

In its recently revised Guideline, the Association of Women's Health, Obstetric and Neonatal Nurses (AWHONN) (2013),[24] directs that the RH of the air in the incubator should be above 70% in the first seven days and may be gradually reduced to 50% after the first week, until the child is 28 days old. The AWHONN[24] also suggests that the RH is maintained at 50% to 30-32 weeks post-conceptional age.

Another study evaluated the selected procedures and routine practices for temperature and humidity management of incubators in France in 2009.[14] The results showed that there were large variations in running both the thermal control as a unit incubators moisture therapy for neonatal other. This shows that both in practice and in the literature, the humidification management and incubator temperature is not universal and must be standardized individually in each institution.

Also related to PAT and prevention of thermoregulatory a study[17] indicates the use of transparent adhesives, plastics, to contain the heat when the infant crib is in radiant heat, the use of emollient oils, skin contact promoting skin and polyethylene plastics of use to cover the RN. The skin-to-skin and favors the proper thermal control also provides better neurobehavioral and psycho-affective development of RN increases the mother-child bond,

provides better sensory stimulation, and reduces pain and stress of preterm infants, among other benefits.[25]

With respect to polyethylene plastic, a prospective randomized study evaluated 96 children controled[8] randomly divided into three groups, 32 with polyethylene caps, 32 involved with plastic polyethylene and 32 in the control group, where children were dried with conventional methods after delivery. This study showed that the caps and polyethylene wraps are more effective in heat loss prevention after delivery than conventional methods.

A program implemented in an intensive care nursery in the United States, where children dressed with more than 1000 grams, clinically stable and did not require phototherapy, continuous observation or chest tubes, was described in one of the selected articles.[7] Children were dressed in incubators or cribs and the incubator temperature was maintained through servo control to the skin or air as drive protocol. The study found that the use of clothing provides better heat insulation in preterm infants, favors the thermoregulation, individualized care and promotes proper development of newborns.

An experimental type randomized clinical trial study,[22] was conducted in a NICU in Fortaleza-Ceará, Brazil, with 42 preterm infants, 21 in the intervention group, it was applied in the second hour of life, a thin membrane semipermeable polyurethane on intact skin, fixed in the thorax, abdomen, back and extremities, remaining until the end of the first week of life. In 21 newborns in the control group, was not applied to the membrane. The intervention group showed more clinically stable, better maintenance of sodium, urine specific gravity, blood glucose and water quota, besides having earlier recovery than the newborns in the control group.

In a retrospective cohort study[9] with 140 extreme low weight children, 70 of the study group were placed in polyethylene bags and 70 in the control group met without polyethylene bag, showed that the axillary temperature at the time admission to the NICU and one hour was higher in the study group compared with the control group. The incidence of intraventricular hemorrhage grade III and IV combined with periventricular leukomalacia (PVL) also decreased in the study group compared with the control group.

The studies[8-9,22] demonstrate that the use of polyethylene or polyurethane film on the skin after birth PN becomes an excellent strategy to further reduce thermoregulation PAT these patients.

Nurses were interviewed in a study [19], in order to identify the level of compliance on the use of semi-permeable membrane on the skin of preterm infants and watch the nursing care while handling these babies. Nurses interviewed demonstrated knowledge and sensitivity in skin care RN. Regarding the use of semipermeable membrane, some nurses reported needing help in the application, knowledge of product handling, proper positioning of the RN at the time of fixation, attention to changes in the skin and increased RN body temperature control during use. In addition, the interviewees also reported that the permanence of the semi-permeable membrane on the skin of newborns should be two to four weeks, during this period the members of the committee for prevention and treatment of injuries should perform daily valuation. The removal of the membrane must be done cautiously, using distilled water or mineral oil. They emphasize that solvents are contraindicated for removing adhesives.

A study in two hospitals in North Carolina,[10] of 69 children under 33 weeks of gestation preterm infants, compared the effect of two products on the integrity of the skin measured by the Neonatal Skin Condition Score (NSCS), a scale that assesses the conditions of neonatal skin as dryness, erythema and breach of integrity and the PAT for fourteen days. The first product, No-Sting®, a hypoallergenic and non-cytotoxic liquid film which does not burn when applied to damaged skin. The second product, Aquaphor®, an emollient to petrolatum base. The results showed that the scores for skin conditions of children receiving Aquaphor® were significantly higher; however, the scores of both groups over 14 days were within the normal range. No differences between In-Sting® Aquaphor® and the PAT rate during the period of 14 days, demonstrating that both products help in reducing the PAT and maintenance of skin integrity.[10]

It is noted that the use of moisturizing emollient to promote and improve the barrier function of the skin, with consequent reduction of the PAT is widely recommended in the literature.[6,10,17,21]

According to two articles,[6,17] it can be used sunflower oils, canola and petrolatum on the skin of preterm infants. Another study[21] reported that PN skin hydration can be performed with medium chain triglycerides (MCT). The emollient can be used in infants less than 32 weeks gestational age, with applications every six to twelve hours during the first two to four weeks of life. This author also indicates the use of emollients in the diaper area to prevent irritation from urine and feces.[17]

For authors of another article,[6] it can be used emollients in infants less than 33 weeks gestational age, with two applications per day in the first two weeks of life.

Regarding the NB bath, three studies were identified.[6,17,21] Two of these guide the bath should be extended to the PN complete two weeks, after this period, one should avoid daily showers, use only warm water to bathing and hygiene of the genital area.[6,17] In the case of extreme preterm infants with or damaged skin, the authors recommend using warm water with sterile cotton balls and term infants the bath should be extended until stabilization occurs thermal and cardiorespiratory.[17,21]

Two studies[6,17] suggest using soap with neutral pH for the hygiene of the skin or genital area of the full-term newborns. The use of chlorhexidine 0.25% in the first NB bath at term with intact skin barrier is indicated in one of the articles. [21] The same author recommends the use of gloves for professional protection while bathing procedure NB. [21]

Regarding the use of adhesives and fasteners in the skin of the newborn, three studies[6,17-8] recommend limited use, only when indicated, should be removed only when no longer needed. The electrodes for cardiac monitoring should be removed when not functioning or when there is more certainty that they will be no longer needed. The authors recommend that the adhesive is used on guards or skin barriers, such as hydrocolloid or transparent film, previously applied to the skin of preterm infants, the use of the device. Removal of the adhesive should be done carefully and atraumatic, it is recommended to use cotton soaked in water or oil. The use of solvents is contraindicated because it can occur absorption and toxicity.[6,17]

The setting of vascular catheters should be performed with transparent dressings, hypoallergenic, favoring gas exchange, allow minimal handling and conducive to continuous evaluation of the insertion site.[6]

It is also recommended the use of straps with Velcro fastening parts for the oximetry sensor and eye protection in phototherapy for infants, and the attachment site should be alternated every four hours.[6]

As an alternative to the use of urine collectors can be used on cotton balls genitalia PN makes it necessary to subsequently carry out maneuver expression cotton soaked in diuresis in a plastic bag and aspiration of fluid with a syringe.[6]

In contrast, a sterile adhesive remover silicone-based liquid form, in single-use sachets, was presented in a study.[12] This product has proven to be effective for sensitive skin, providing atraumatic removal, reducing pain and decreasing the time of the nursing work, enabling the use of adhesives in the skin of the newborn.

The use of antiseptics to prepare NB skin before invasive procedures was quoted in two studies.[6, 21] Both recommend Chlorhexidine gluconate as antiseptic solution to the skin of the PN. One study[21] warning against the use of iodine-based products that can cause thyroid gland changes, as well as burns and blisters on the skin of the PN. It also recommends the use of aqueous Chlorhexidine, since products with alcohol can be absorbed systemically. [21] Should be remove excess antiseptic with sterile gauze soaked in distilled water or 0.9% saline immediately after the procedure.[6]

Care to prevent injuries caused by venous and arterial punctures were found in two studies.[6,17] It is recommended that blood samples are aggregated and not to use the heel puncture.[6] Furthermore, the first venous and arterial access should be umbilical route, installed immediately after birth, lasting for seven days, when it should be inserted central catheter peripherally inserted. The Jelco® type peripheral catheters should only be used in the inability to access or deep blood transfusions.[6] It shall be established a systematic approach related to intravenous therapy and act carefully in sample collection by venipuncture and perform handwashing before performing these procedures .[17]

The selected studies, three[17-8,21] point to changing positions as a strategy for pressure ulcer prevention. Recommend the use of special mattresses to reduce pressure points .[17,21] It is suggested that the skin is often evaluated, especially in areas of bony prominences, venipuncture and skinfold areas must be kept clean and dry.[17] Massage comfort can help prevent pressure ulcers.[21]

Guidelines for the treatment of skin lesions in newborns were identified in four studies.[6,13,15,17] Hydrocolloid should be used to cover or petrolatum-based oils for treatment of wounds 6 The wound should be irrigated with saline 0 9% warm every four to eight hours, and one should avoid using antiseptics. In cases of infection, they should be harvested crop. It can be used with or without hydrogel dressing antibacterial ointment, according to medical prescription. Transparent dressings should be used to facilitate viewing and staff should be alert to early signs of infection.[17]

Appropriate interventions for the management of wound depend on several factors to determine the cause, knowing the potential sources of injury, and understanding of the physiology and know the factors that affect healing, evaluate the injury considering aspects

related to the patient and the wound. It is recommended to use tools for evaluation, emphasizing that one should consider the anatomical location and time of injury. The size and dimensions must be measured and documented. Attention should be paid to the amount and exudate characteristics, wound bed, assessment of perilesional skin and pain and stress signals.[13]

Adhesives should be used that minimize skin trauma or tubular net for securing the dressing. Healing needs to be optimized by maintaining a suitable environment, providing up appropriate humidity and temperature, bacterial balance and maintaining neutral pH or slightly acid in the wound bed. The appropriate coverage should provide protection against bacteria and trauma, relieve pain and reduce the need for frequent changes. The wound care must be performed with a heated saline irrigation, and the necrotic tissue should be debrided. This author also points out the consistent communication between the team as a key factor in managing wounds.[13]

One of the studies[15] describes the treatment carried out in a PN. The same was hospitalized in the NICU because of respiratory distress and also had deformity of the right ankle. With two days of life suffered a full thickness injury peripheral intravenous extravasation of parenteral nutrition on the right foot. The care included evaluation of the plastic surgery team, elevation of the limb affected in order to reduce edema, use of topical silver sulfadiazine and subsequent removal of necrotic tissue. It also used acellular dermal substitute application and autologous keratinocytes. Two months later, it was observed that the scars were apparent and after nine months foot deformity had worsened. Thus, the patient underwent surgery for correction of the deformity and reconstruction of scars. The treatment followed by placing cell dermal substitute and later with new application of autologous keratinocytes and fibroblasts. Three months after surgery and fourteen months after the overflow, the wound was completely healed.[15]

The study above[15]shows that treatment of an injury in preterm infants can be very difficult and time consuming; furthermore, it is costly for the institution requiring special inputs and efforts of a multidisciplinary team trained and specialized for the management of the case.

It is understood that the care of the newborn skin is a broad process that requires scientific, responsibility, commitment, love and dedication on the part of the nursing team. This reinforces the assertion that the skin care "is a nursing intervention continuously, dynamic, effective, individualized, detailed and humane, for the promotion, maintenance or restoration of skin integrity of the newborn considering the physiological, environmental and assistance ".[23:484]

Finally, based on the selected studies, we can see that the skin care to the NB deserves careful attention and should be based primarily on prevention and maintenance of its integrity.

CONCLUSION

This study showed a variety of guidelines that can be used by health professionals, mainly by nursing staff in the care of the skin of newborns. It is noteworthy that the most discussed topics were: injury causes, nursing care in injury prevention, proper handling of the newborn, skin assessment, PAT prevention, thermoregulation, use of emollients, bathing, use of antiseptics, adhesives, fixing devices, prevention of pressure ulcers, punctures care and treatment of injuries.

Based on the selected studies, it is possible to see that the issue is relevant, current and widely discussed in the literature, explaining the importance of enhancing the knowledge on the specifics of the neonatal population.

In this study it can be seen that the difficulties to be conducting research in neonates were not impeding the development of research into the use of products to treat injuries in this population. However it appears that there is a gap between theory and practice, believed to be related to the inability of the nursing team to incorporate this new knowledge in their daily practice.

It becomes important noting that research on the skin of newborns should serve to underpin the care practice. It is noticed that the suggestions for proper skin care NB are many, so it's up to the professionals of the nursing team, responsible for this, use them in improving their practice.

The results of this review reinforce the importance of constant development of related research, providing a humanized, individualized, quality care, ensuring the safety of the neonatal patient.

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Contact of the corresponding author:
Simone Vidal Santos
Campus Universitário Reitor João David Ferreira Lima, Florianópolis, SC, Brasil.CEP: 88040-900. Florianópolis, S.C. Brazil
Email: simonevidal75@gmail.com